

**REMARKS**

Claims 5-11 are pending in the application and are presented for examination in view of the foregoing amendments and following remarks.

In the outstanding Office Action claims 1-4 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,420,635 to Konishi et al.

By this Response and Amendment claims 1-4 are canceled and newly submitted claims 5-11 are added. Support for newly submitted claims 5-11 is found in the originally filed specification at pages 12-26.

It is therefore respectfully submitted that the above amendments introduce no new matter within the meaning of 35 U.S.C. § 132.

**Rejection under 35 U.S.C. § 102**

The Examiner rejected claims 1-4 as anticipated by U.S. Patent No. 5,420,635 to Konishi et al.

**RESPONSE**

Claims 1-4 have been canceled thereby rendering the rejections thereto moot.

Accordingly, reconsideration and withdrawal of the rejections is respectfully requested.

**Newly Submitted Claims**

Newly submitted independent claim 5, and claims 6-11 dependent therefrom, are asserted to be patentable over the cited prior art for the following reasons:

The present invention relates to an image pickup apparatus having a moving-picture pickup mode in which a moving picture is picked up and a still-picture pickup mode in which a still picture is picked up. The image pickup apparatus includes an interline type charge-coupled device having a frame in which a first plurality of lines each having a first plurality of pixels are arranged and the first plurality of lines include a second plurality of pixels, and mixing and reading out a third plurality of pixels that extend over a second plurality of lines among the first plurality of lines in the moving-picture pickup mode.

As described in the specification of this application, if a still picture is picked up with an interline type charge-coupled device as conventional, a time lag (1/60 sec. in the NTSC system) is caused between two field-images constituting one frame image so that a double image is generated. The present invention aims at solving the problem.

Specifically, there is provided control means for controlling driving means to allow incident-light quantity adjusting means to intercept the incident light upon the charge-coupled device when the moving-picture pickup mode is replaced with the still-picture

pickup mode. Accordingly, pixel data comprising one frame image read out from the charge-coupled device before the incident-light quantity adjusting means intercepts the incident light upon the charge-coupled device can be obtained.

Field image reading-out means does not mix but sequentially reads out a first field image and a second field image based on the pixel data comprising one frame image, where the first field image comprises lines each being one of respective adjacent two lines of the first plurality of lines and the second field image comprises lines each being the other of the respective adjacent two lines. Since the first field image and the second field image are obtained from the pixel data comprising one frame image, there is no time lag between the two field-images.

For the above reason, unlike the conventional way, a still-picture frame image generated by still-picture generating means which adds the first field image and the second field image is not a double image but a still picture with high quality.

Konishi et al. fails to teach or suggest the above feature of the present invention.

From the foregoing descriptions, the Applicants respectfully submit that the present claims define over Konishi et al.

#### **MISCELLANEOUS**

The references cited by the Examiner have been reviewed and

it is submitted that the claims as herein resubmitted are patentable thereover.

**CONCLUSION**


In light of the foregoing, Applicant submits that the application is in condition for allowance. If the Examiner believes the application is not in condition for allowance, Applicant respectfully requests that the Examiner contact the undersigned attorney if it is believed that such contact will expedite the prosecution of the application.

Respectfully submitted,

**NATH & ASSOCIATES PLLC**

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NATH & ASSOCIATES PLLC  
1030 Fifteenth Street, N.W.  
Sixth Floor  
Washington, DC 20005  
(202) 775-8383

  
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Gary M. Nath  
Registration No. 26,965.  
Marvin C. Berkowitz  
Registration No. 47,421

Attachment "A"  
(Pending Claims)

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*Al*  
*cont*  
1. (Canceled)

2. (Canceled)

3. (Canceled)

4. (Canceled)

5. (New) An image pickup apparatus having a moving-picture pickup mode in which a moving picture is picked up and a still-picture pickup mode in which a still picture is picked up, the apparatus comprising:

an interline type charge-coupled device having a frame in which a first plurality of lines each having a first plurality of pixels are arranged and the first plurality of lines include a second plurality of pixels, and mixing and reading out a third plurality of pixels that extend over a second plurality of lines among the first plurality of lines in the moving-picture pickup mode;

incident-light quantity adjusting means for adjusting a quantity of light incident upon the charge-coupled device;

driving means for driving the incident-light quantity adjusting means;

control means for controlling the driving means to allow the incident-light quantity adjusting means to intercept the incident light upon the charge-coupled device when the moving-

picture pickup mode is replaced with the still-picture pickup mode;

*Amend*  
field image reading-out means for sequentially reading out a first field image and a second field image without mixture, wherein the first field image comprises lines each being one of respective adjacent two lines of the first plurality of lines of a frame image read out from the charge-coupled device before the incident-light quantity adjusting means intercepts the incident light upon the charge-coupled device and the second field image comprises lines each being the other of the respective adjacent two lines; and

still-picture generating means for adding the first field image and the second field image to generate a still-picture frame image.

6. (New) The image pickup apparatus according to claim 5, further comprising:

memory means for storing pixel data that corresponds to the frame image read out from the charge-coupled device before the incident-light quantity adjusting means intercepts the incident light upon the charge-coupled device,

wherein the field image reading-out means reads out the first and second field images based on the pixel data that corresponds to the frame image stored in the memory means.

7. (New) The image pickup apparatus according to claim 5,  
further comprising:

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display-format converting means for converting a first  
picture-display format into a second picture-display format  
with respect to the pixel data that corresponds to the frame  
image read out from the charge-coupled device before the  
incident-light quantity adjusting means intercepts the  
incident light upon the charge-coupled device.

8. (New) The image pickup apparatus according to claim 6,  
further comprising:

display-format converting means for converting a first  
picture-display format into a second picture-display format  
with respect to the pixel data that corresponds to the frame  
image read out from the charge-coupled device before the  
incident-light quantity adjusting means intercepts the  
incident light upon the charge-coupled device.

9. (New) The image pickup apparatus according to claim 7,  
wherein the display-format converting means comprises  
horizontal pixel density converting means that converts the  
first picture-display format that does not indicate a  
tetragonal lattice into the second picture-display format that  
indicates the tetragonal lattice.

10. (New) The image pickup apparatus according to claim 8,  
wherein the display-format converting means comprises  
horizontal pixel density converting means that converts the  
first picture-display format that does not indicate a  
tetragonal lattice into the second picture-display format that  
indicates the tetragonal lattice.

11. (New) The image pickup apparatus according to claim 5,  
wherein the second plurality of lines are two lines adjacent  
to each other in the vertical direction and the third  
plurality of pixels are two pixels adjacent to each other in  
the vertical direction.